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NATURAL RESOURCES

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL, GAS, AND MINING

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M E M O R A N D U M
* * * * *

TO: The Board of Oil, Gas and Mining

FROM: D. Wayne Hedberg, Reclamation Hydrologist

SUBJECT: Tentative Approval
Ranchers Exploration & Development Corporation
Escalante Silver Mine
ACT/021/004
Iron County, Utah

DATE: August 19, 1980

The Division staff has reviewed the Mining and Reclamation Plan submitted by Ranchers Exploration and Development Corporation for their Escalante Silver Mine in Iron County and feels that the plan meets the requirements of the Utah Mined Land Reclamation Act.

The Division seeks the Board's concurrence for issuing tentative approval so that publishing an abbreviated version of the plan may proceed. In addition, the Division seeks the Board's concurrence on the amount of reclamation surety and requests the Board's opinion on the form of surety to be requested from Ranchers Exploration and Development Corporation, also pending no adverse public comment, issuance of final approval. An Executive Summary and Bond Estimate is attached for your review.

You will also find attached a letter from Rancher Exploration and Development Corporation requesting that a speedy determination be made in reference to approval of their Notice of Intention to Commence Mining Operations for the reasons and justifications submitted therein.

DWH/te

Attachment

LOCATION:

The Escalante Silver Mine operation is situated 38 miles west of Cedar City, Utah, 3-1/2 miles southwest of Beryl Junction, Utah, and 8 miles north of Enterprise, Utah. The mine and milling site and additional ancillary facilities will be located in the southeastern corner of Section 2, Township 36 South, Range 17 West, Iron County. Lode claims are located in Section 1-3, 9-12, and 14-16. The tailing disposal area will be located approximately 1-1/2 miles west of the mine site in Sections 3 and 10. The mine is among the foothills along the western edge of the Escalante Valley about 50 to 80 feet above the valley floor at an elevation of 5,250 feet mean sea level. Refer to attached map.

SOILS AND GEOLOGY:

Soil data is based upon subsoil cores obtained from test holes drilled at the proposed mill site to determine proper engineering stability design. The soils encountered are slightly alkaline and consist of 2 to 49 feet of mixtures of moist clay and low density clays (generally of low swelling capacity), silts and sands over a very hard volcanic bedrock sequence. Topsoil is very limited in extent within the area (ie., approximately 1 ft. average; personal communication, Mark Welch).

The ore body is situated within an area of gently dipping early Tertiary volcanics, which consist of andesite-trachyte-latitude ignimbrites (welded tuff). Additional water-lain volcanics consist of tuffaceous sandstones and conglomerates. The valley floor alluvium consists of interbedded and unconsolidated clay, silt, sand and gravel eroded from the mountains bordering the valley margins.

The ore deposit consists of two in echelon, steeply dipping (70°) epithermal quartz-calcite veins 5 to 50 feet wide trending northeast. The ore-grade depth is about 500 feet from the surface and the ore body has a northerly strike length of approximately 3,000 feet.

HYDROLOGY:

Climate is semi-arid and the total average annual precipitation is approximately 12 inches. Net evaporative losses range from 40-50 inches per year. No perennial streams are present within the area, although Shoal Creek, an intermittent stream, does drain the valley floor, flowing northeastward from Enterprise and recharges the local aquifer through its highly permeable channel deposits. The principal use of the regional groundwater supply is for agricultural purposes. Most water supply development has occurred in the southern end of the valley (Beryl-Enterprise District). Ranchers will utilize a series of high capacity turbine pumps to dewater the orebody within the mine vicinity. Water removed from the aquifer will be pumped via two canals (north

and south) to natural recharge areas (ie., Shoal Creek and North Canal) to replenish the temporary losses. Ranchers has committed to replace or reimburse any documented disruption of water supply effecting local users in lieu of Ranchers dewatering activities. The mining and dewatering sequence will consist of four stages. The initial 3-1/2 month pilot program has been approved and completed. Three additional stages will follow; a 24-month mining program, a 33-month program and a 50-month program each at differencet pumping rates and increasing mining depths. Total life of the mine will be approximately 10 years.

ECOLOGY:

Vegetation within the mine area consists chiefly of sagebrush (75%), broom snakeweed, galleta grass, cactus and associated annuals. The area is utilized for limited range and wildlife habitat and some local irrigated crop production.

STRUCTURES AND FACILITIES:

The total area to be disturbed at the mine site will be approximately 80 + acres. This includes the mill, stockpiles, and associated surface facilities as well as the tailing disposal area. Additional disturbance would consist of the construction of the 4-1/2 mile south canal and widening of the existing 4 mile north canal. Surface facilities will consist of an administration-maintenance-warehouse complex, an assay laboratory, coarse ore bin, crusher building, concentrator, waste dump, and site services.

MINING AND RECLAMATION:

During Operations:

1. Existing mining workings will be utilized and further developed.
2. Available topsoil and/or suitable growth medium will be stripped, stockpiled and adequately protected prior to any major surface disturbance of the mining operation.
3. Very few roads will have to be constructed in the site area. Existing access and country roads will be utilized when and wherever possible. Some improvement and routine maintenance will be provided as necessary.
4. The mill, ancillary facilities, and tailings pond will be designed for zero discharge of waste waters and complete containment of any potential spills.
5. Mining will be conducted in a safe and orderly manner and will strive to minimize environmental and visual degradation.

After Operations:

1. All debris and trash resulting from the operation will be disposed of and/or removed from the property as approved by the Utah Division of Oil, Gas and Mining and the Division of Health.
2. Roads, parking lots, buildings and other areas of this nature will be reclaimed as necessary, provided there are no potential beneficial uses upon cessation of mining activities.
3. Upon project termination, stockpiled topsoil will be redistributed over the disturbed areas as appropriate, contoured, reseeded with suitable grasses and native vegetation.
4. Mulching, fertilization and irrigation will be undertaken until such time as the vegetation is self-sustaining. All disturbed areas will be monitored and reseeded if necessary.
5. Any contouring will be done as to minimize erosion utilizing minimal slopes (10% max.).
6. Upon project termination, all shafts and other underground entries will be closed to prevent accidents or unauthorized entry. Appropriate warning signs will be posted as necessary.
7. Ranchers has committed to comply with Rule M-10, "Reclamation Standards" in its entirety.

IMPACTS:

Major impacts as a result of this mining operation would concern the changes in the local underground water quantity and quality. Ranchers has addressed and will undertake necessary means and measures to document, protect, and mitigate any problems which may arise as a consequence of their mining operation. Any other visual and environmental impacts will be mitigated upon final reclamation of the area.

SURETY ESTIMATE:

Surety for this operation was estimated to be \$119,574.00, including a 13% inflation factor for an anticipated mine life of 5 years.* Work included in the estimate consists of the following:

- a. Removal of trash, debris, structures, roads, etc.
- b. Earthwork including spreading, regrading, and recontouring.

- c. Soil preparation, scarification and seeding.
- d. Removal of explosives.
- e. Sealing of incline.
- f. Supervision and annual inspections.

*Actual mine life is anticipated to excess 5 years, therefore the surety is to be re-adjusted as required every 5 years. A copy of the surety estimate is attached.

APPLICATION HISTORY:

July 9, 1980	Division received 4 copies of Ranchers Exploration & Development Corporation's proposed mining plan.
July 14, 1980	Received 2 letters from Ranchers: 1. First letter concerned the urgency of the Division's prompt review of Ranchers proposed mine plan in order to comply with RCRA requirements. 2. Second letter and enclosures submitted to the Division as additional provisions to be incorporated in their mining plan.
August 1, 1980	Notice of Hearing/Order to Show Cause, before the Board of Oil, Gas and Mining, Department of Natural Resources, for tentative approval by the Division was submitted for publication.
August 7, 1980	Public Order to Show Cause and Notice of Hearing for Ranchers Exploration & Development Corporation was published.
August 8, 1980	Division received notarized Proof of Publication that said Notice of Hearing had been published.

EXECUTIVE SUMMARY
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thru
August 15, 1980

Contact with Ranchers Exploration representatives through numerous phone conversation to discuss any questions the Division might have in reference to their proposed mine plan received on July 9, 1980.

August 18, 1980

Division meeting with Ranchers Exploration representatives, James M. Rosel and Randy Scheffel as requested by Ranchers. The purpose was to discuss any final problem areas which might need to be rectified prior to submission before the Board on the August 20, 1980 hearing in request for tentative approval to commence mining operations.

DIVISION OF OIL, GAS, AND MINING

BOND ESTIMATE

OPERATOR: Ranchers Exploration & Development Corporation
 MINE NAME: Escalante Silver Mine
 LOCATION: Sections 1-3, 9-12, & 14-16, T. 36S., R. 17W.
 COUNTY: Iron
 DATE: August 19, 1980.

	Operation	Amount	Rate	Cost
A.	CLEAN-UP			
	1. Removal of structures & equipment.	\$1,500.00	Lump sum	\$ 1,500.00
	2. Removal of trash & debris.	\$1,000.00	Lump sum	\$ 1,000.00
	3. Leveling of ancillary facilities pads and access roads.	9 foundations	\$1,000/fnd.	\$ 9,000.00
		2.5 ml. road scarification		
B.	REGRADEING & RECONTOURING	(16ft. wd. rd.)	.21/sq. yd.	\$ 5,000.00
	1. Earthwork including haulage and grading of spoils, waste and overburden.	10,000 yd ³ (waste dock)	0.89/yd ³	\$ 8,900.00
	2. Recontouring of highwalls and excavations.	1 decline	\$1,000/dcln.	\$ 1,000.00
		80 acres		
	3. Spreading of soil or surficial materials.	(9600 yd ³ tps1)		
		3" depth avrg.	0.84/yd ³	\$ 8,000.00
C.	STABILIZATION			
	1. Soil preparation, scarification, fertilization, etc.	80 acres	\$25.00/acre	\$ 2,000.00
	2. Seeding or planting.	80 acres	\$150/acre	\$ 12,000.00
	3. Construction of terraces, waterbars, etc.	N/A	-	-
D.	LABOR	100 hours	\$10.00/hour	\$ 1,000.00
	1. Supervision.	N/A (included in B and C abv)	-	-
	2. Labor exclusive of bulldozer time.			
E.	SAFETY			
	1. Erection of fences, portal coverings, etc.	1 portal	\$1,000/prtl	\$ 1,000.00
	2. Removal or neutralization of explosive or hazardous materials.	\$500.00	Lump sum	\$ 500.00
F.	MONITORING			
	1. Continuing or periodic monitoring, sampling & testing deemed necessary.	Reseed 80 acs. if necessary	\$175.00/ac	\$ 14,000.00
G.	OTHER		SUBTOTAL	\$ 64,900.00
	1. 13% inflation factor for 5 years.			\$ 54,674.00
			TOTAL	\$119,574.00

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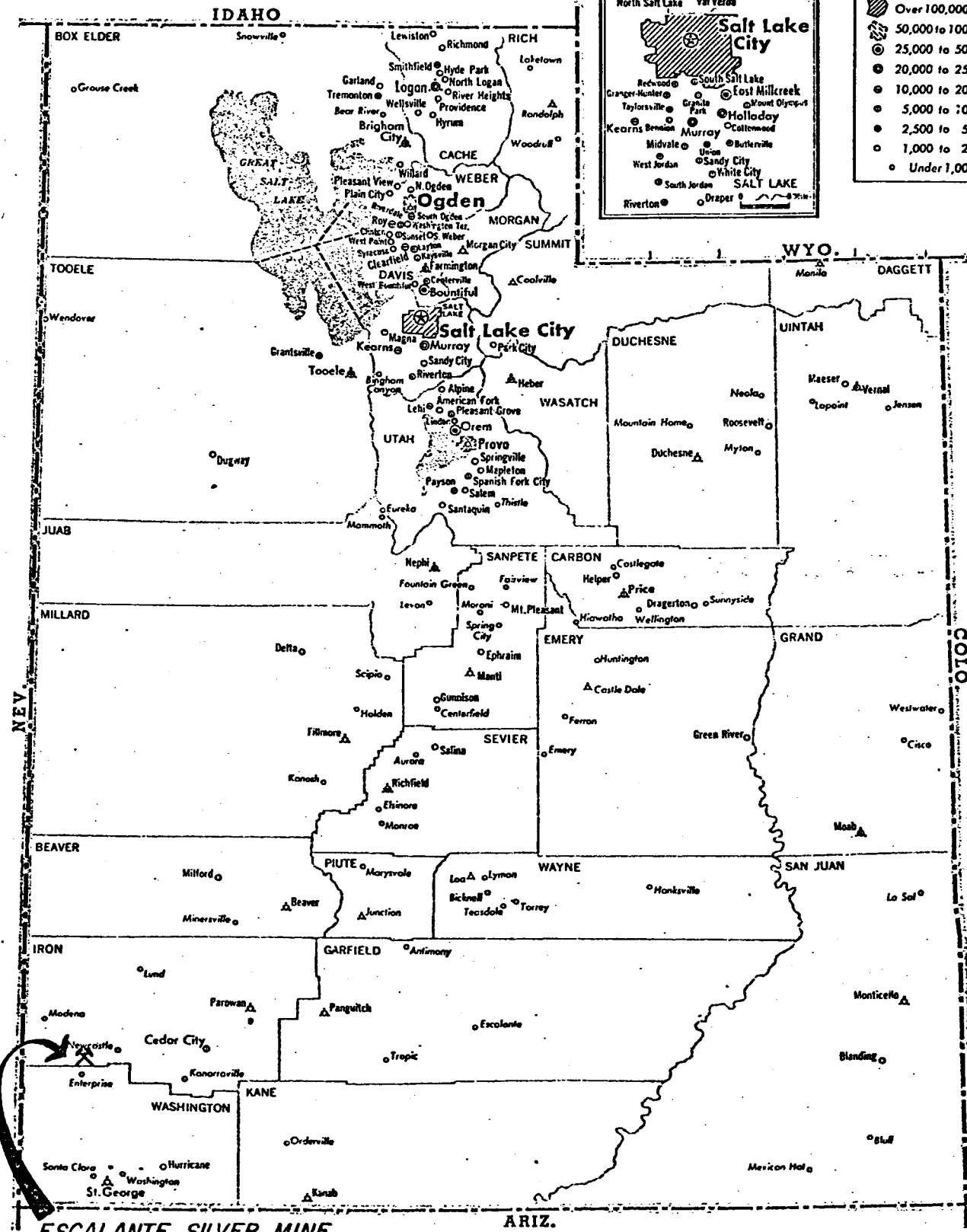
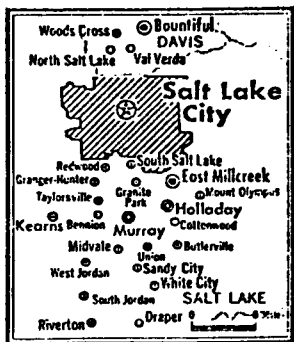
UTAH

Scale of Miles
0 20 40 60

LEGEND

State Capital
County Seats
MORGAN County Names
POPULATION KEY

- Over 100,000
- 50,000 to 100,000
- 25,000 to 50,000
- 20,000 to 25,000
- 10,000 to 20,000
- 5,000 to 10,000
- 2,500 to 5,000
- 1,000 to 2,500
- Under 1,000



ESCALANTE SILVER MINE

ARIZ.

